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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/422,347	10/21/1999	DIRK OOMS	Q056325	5427

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EXAMINER

SWICKHAMER, CHRISTOPHER M

ART UNIT PAPER NUMBER

2662

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/422,347

Applicant(s)

OOMS ET AL.

Examiner

Christopher M Swickhamer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Response to Amendment*

1. This Office Action is in response to the Amendment filed 01/23/04. Amended claims 1, 4, 7, 8 and 10 have been entered. Claims 1-16 are pending. Currently no claims are in condition for allowance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Boivie (USP 6,502,140).

- Referring to claim 1, Boivie discloses a device for compressing a list of final destination addresses for a multicast message, wherein each destination address in said list represents a different destination host (abstract, Fig. 1, col. 4, lns. 30-63), said device comprising: means for detecting a common prefix in at least two different destination addresses from of said list of destination addresses (col. 4, lns. 30-63, R1 R2 D, R1 R2 C, detect that R1 and R2 are common to destinations C and D), means for generating a suffix list for destination addresses from said list of destination addresses that are detected to have a common prefix (col. 4, lns. 50-60), wherein said suffix list represents

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the non-identical portions of said detected destination addresses (C and D), and means for adding said suffix list to said common prefix to create a compound destination address consisting of compressed final destination addresses (col. 3, lns. 10-45, col. 4, lns. 30-63, R1 R2 (C D)).

- Referring to claim 2, Boivie discloses the device for compressing according to claim 1, wherein said list of destination addresses comprises Internet Protocol addresses (col. 3, lns. 45-60).

- Referring to claim 3, Boivie discloses the device for compressing according to claim 1, wherein said list of destination addresses comprises Internet Protocol addresses and other compound destination addresses (col. 3, lns. 10-60, col. 4, lns. 50-57).

- Referring to claim 4, Boivie discloses the device for compressing according to claim 1, wherein said list of destination addresses comprises compound destination addresses (col. 4, lns. 50-57).

- Referring to claim 5, Boivie discloses the device for compressing according to claim 1, wherein said device is incorporated in a host of a communications network having connectionless multicast transmission capabilities (col. 2, lns. 50-67).

- Referring to claim 6, Boivie discloses the device for compressing according to claim 1, wherein said device is incorporated in a router of a communications network having connectionless multicast forwarding capabilities (col. 2, lns. 50-67).

- Referring to claim 7, Boivie discloses a method for compressing a list of final destination addresses for a multicast message, wherein each destination address in said list represents a different destination host (abstract, col. 2, lns. 17-40, col. 4, lns. 30-65, host C and D) said method comprises: detecting a common prefix in at least two different

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destination addresses from said list of destination addresses (col. 4, lns. 30-55, detect R1 and R2 being in common), generating a suffix list for destination addresses from said list of destination addresses that are detected to have a common prefix (col. 4, lns. 50-65, C and D), wherein said suffix list represents the non-identical portions of said detected destination addresses, and adding said suffix list to said common prefix to create a compound destination address consisting of compressed final destination addresses (col. 3, lns. 10-60, col. 4, lns. 55-60, R1 R2 (C D)).

- Referring to claim 8, Boivie discloses a router of a communications network having connectionless multicast forwarding capabilities, wherein said router incorporates a device for compressing the list of destination addresses of a multicast message as defined by claim 1 (col. 2, lns. 50-67).

- Referring to claim 9, Boivie discloses a router according to claim 8, wherein said router further comprises: a routing table memory to store the destinations (col. 4, lns. 30-65, routers have routing tables), and means to address said routing table memory via a compound address having the same format as said compound destination address (col. 4, lns. 45-65).

- Referring to claim 10, Boivie discloses a host of a communications network having connectionless multicast transmission capabilities, wherein said host incorporates the device for compressing a list of destination addresses of a multicast message as defined by claim 1 (Fig. 1, col. 2, lns. 50-67).

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***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boivie (USP 6,502,140).

- Referring to claim 11-16, Boivie discloses the device for compressing according to claims 1 and 7, wherein said means for detecting to detect a common prefix detects byte-aligned prefixes (col. 3, lns. 45-60). The system of Boivie could be modified to detect nibble aligned, octet aligned, bit aligned, or any other length of bits or bytes. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the system of Boivie, with the ability to detect common prefixes in different lengths, such as in bits, bytes, or nibbles. One of ordinary skill in the art would have been motivated to do this since source, intermediate and destination addresses can be of different lengths. Using different lengths to search for a common prefix could be modified to adapt the system for use in networks with longer or shorter address lengths. Adjusting address lengths could also be used to further optimize the prefixes. By using shorter prefixes, longer matches could be potentially found between the addresses. Selecting any number of bits would be design choice depending on the number of bits in the address.

***Response to Arguments***

6. Applicant's arguments filed 01/23/04 have been fully considered but they are not persuasive.

- On page 7, lns. 3-5 of the remarks sections, Applicant argues that Boivie does not teach a device that adds a suffix list to a common prefix to create a compound destination address that consists of compressed final destination addresses as amended to be included in claim 1. The Examiner respectfully disagrees. Boivie teaches forming a compound address by removing the common prefix along routes that traverse the same path. For example, assume that the route from source node A, to destination nodes B, C, and D does not include destination node B. Boivie teaches to find the largest common prefix along routes R1 R2 D and R1 R2 C. The system of Boivie determines that the largest common prefix is R1 R2. The system forms a suffix list of the destination addresses, which are C and D. The system then forms a compound address of R1 R2 (C D). Thus Boivie teaches of an address with a prefix (R1 R2), and a compressed final destination addresses (C D, col. 4, lns. 30-63). The Examiner believes that for these reasons the claimed invention still reads on the system of Boivie. The modification to the claims appear to be directed toward the last step in the instant application in Figure 1 from router R1 to router R2, and finally to destinations D1 and D2. This is where the address is modified from A.B.C {D,E} to A.B.C.D for destination D1, and A.B.C.E for destination D2. The claims now appear to exclude the branch from H1 to R1 with the intermediate information, A{B.C {D,E}, F.G.H}. Applicant has submitted similar arguments found on page 8, lns. 1-3, pg. 10, lns. 1-3, and pg. 11, lns. 4-7. These

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arguments for claims 7, 11-13 and 14-16 are analogous to the arguments made for claim

1. The Examiner takes the same position on these arguments as he did for claim 1.

- Therefore, the Examiner believes that the rejections under 102(e) and 103(a) are proper.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M Swickhamer whose telephone number is (703) 306.4820. The examiner can normally be reached on 8:00-4:30 M-F.

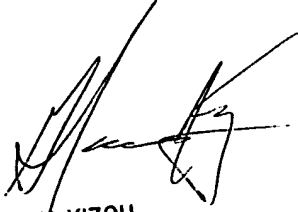


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703) 305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CMS  
March 22, 2004



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